6   a client node, adapted to receive an allocated nodal maximum bandwidth from the

7   administrator node, and further adapted to determine current values of a

8   set of variables related to bandwidth usage by the one or more processes at

9   the client node and to communicate the current values to the administrator

10   node, wherein the administrator node utilizes the current values to adjust

11   the allocated nodal maximum bandwidths for the one or more nodes.

1   6.   (New) The computer network of claim 5, wherein the one or more

2   processes include a teleconference.

1   7.   (New) The computer network of claim 5, wherein the one or more

2   processes include a broadcasting process.

1   8.   (New) The computer network of claim 5, wherein the one or more

2   processes include a video serving process.

1   9.   (New) The computer network of claim 5, wherein the allocated nodal

2   maximum bandwidth for each node is shared by all program elements at the node.

1   10.   (New) The computer network of claim 5, wherein the allocated nodal

2   maximum bandwidth for each node is shared by program elements at the node associated

3   with a predetermined class of processes.

1   11.   (New) The computer network of claim 10, wherein the predetermined

2   class of processes comprises the one or more processes involving transmission of large

3   amounts of data.

1   12.   (New) The computer network of claim 5, wherein the administrator node

2   is adapted to allocate nodal maximum bandwidths for all nodes of the network.

1   13.   (New) The computer network of claim 5, wherein the nodal maximum

2   bandwidths are determined based on participation of the respective nodes in the one or

3   more processes involving transmission of large amounts of data.

1   14.   (New) The computer network of claim 5, wherein the set of variables

2   related to bandwidth usage by the one or more processes involving transmission of large

3   amounts of data comprises:

4   at least one variable indicating an actual usage of bandwidth at a node by the one

5   or more processes; and

6   one or more variables related to a predicted usage of bandwidth at a node by the

7   one or more processes in the immediate future.

1   15.   (New) The computer network of claim 14, wherein the one or more

2   variables related to the predicted usage of bandwidth comprises:

3   a number of active processes at the node that are capable of transmitting data; and

4   a number of active connections on the node, wherein each connection requires a

5   separate copy of data being transmitted.

1   16.   (New) The computer network of claim 5, wherein the client node is

2   further adapted to calculate a nodal happiness factor based on the set of variables related

3   to bandwidth usage by the one or more processes and on the allocated nodal maximum

4   bandwidth.

1   17.   (New) The computer network of claim 5, wherein the client node

2 publishes the current values of the set of variables related to bandwidth usage at the client

3 node to be accessed by all nodes of the network.

1   18.   (New) The computer network of claim 5, wherein:

2   the client node is further adapted to assign portions of the allocated nodal

3   maximum bandwidth among program elements at the client node, such

4   that the total of the assigned portions is not greater than the allocated

5   maximum bandwidth.

6   19.   (New) The computer network of claim 18, wherein the client node

7 periodically calls a monitoring program for:

8   exchanging information with each program element; and

9   updating variables indicating an actual usage and a predicted usage of bandwidth

10   by each program element.

11   20.   (New) The computer network of claim 19, wherein the monitoring

12 program comprises:

13   one or more function sets which, if manipulated by a node other than the

14   administrator node, render the monitoring program unusable.

15   21.   (New) The computer network of claim 19, wherein the monitoring

16 program comprises:

17   a hacker variable which indicates whether or not any node other than the

18   administrator node has attempted to turn off the monitoring program.

1   22.   (New) The computer network of claim 18, wherein the client node

2 periodically calls a bandwidth allocation program for assigning portions of the allocated

3 nodal maximum bandwidth among program elements.

4   23.   (New) The computer network of claim 22, wherein the bandwidth

5 allocation program is for:

6   determining a priority and a maximum and minimum requested bandwidth for

7   each program element; and

8   in order of priority, assigning to each program element the minimum requested

9   bandwidth, until the allocated nodal maximum bandwidth is used up; and

10   if the allocated nodal maximum bandwidth is not used up by the assigning of

11   minimum requested bandwidths, assigning additional bandwidth to each

12   program element in order of priority.

1   24.   (New) The computer network of claim 18, wherein the client node

2 periodically calls a happiness query program that determines a happiness factor of each

3 program element.

4   25.   (New) The computer network of claim 24, wherein the happiness factor

5 of a program element is an average score of happiness over all connections to which the

6 program element is transmitting data.

7   26.   (New) The computer network of claim 24, wherein the happiness factor

8 of each program element can be visually displayed using color coding.

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9   27.   (New) The computer network of claim 24, wherein the happiness factor

10   of each program element is published to be accessed by all nodes of the network.

11   28.   (New) A computer readable medium for administering one or more

12   processes involving transmission of large amounts of data in a computer network, the

13   computer readable medium comprising:

14   an administrator program, executable on the computer network for allocating

15   nodal maximum bandwidths for one or more nodes of the network and

16   communicating to the one or more nodes the respective allocated nodal

17   maximum bandwidths; and

18   a client program, executable on the computer network for receiving an allocated

19   nodal maximum bandwidth from the administrator program, and further

20   for determining current values of a set of variables related to bandwidth

21   usage by the one or more processes at the client node and communicating

22   the current values to the administrator program, wherein the administrator

23   program utilizes the current values to adjust the allocated nodal maximum

24   bandwidths for the one or more nodes.

1   29.   (New) The computer readable medium of claim 28, wherein:

2   the client program is further for assigning portions of the allocated nodal

3   maximum bandwidth among program elements at a client node, such that

4   the total of the assigned portions is not greater than the allocated

5   maximum bandwidth.

1   30.   (New) The computer readable medium of claim 28, wherein the client

2   program further comprises:

3   a monitoring program for exchanging information with each program element and

4   updating variables indicating an actual usage and a predicted usage of

5   bandwidth by each program element.

1   31.   (New) The computer readable medium of claim 28, wherein the client

2   program further comprises a bandwidth allocation program for:

3   determining a priority and a maximum and minimum requested bandwidth for

4   each program element;

5   in order of priority, assigning to each program element the minimum requested

6   bandwidth until the allocated nodal maximum bandwidth is used up; and

7   if the allocated nodal maximum bandwidth is not used up by the assigning of

8   minimum requested bandwidths, assigning additional bandwidth to each

9   program element in order of priority.

1   32.   (New) The computer readable medium of claim 28, wherein the client

2   program further comprises:

3   a happiness query program for determining a happiness factor of each program

4   element, wherein the happiness factor of a program element is an average score of

5   happiness over all connections through which the program element is transmitting data.

6   33.   (New) The computer readable medium of claim 32, wherein the happiness

7   query program is further for:

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8   visually displaying the happiness factor of each program element using color

9   coding; and

10   publishing the happiness factor of each program element at a node to be accessed

11   by all nodes of the network.